

AMENDMENTS TO THE CLAIMS:

The listing of claims shown below will replace all prior versions, and listings, of claims in the Application:

Claims 1-38 (Previously Cancelled)

Claim 39 (Currently Amended) An electronic device for performing biological operations comprising:

a support substrate,

an array of microlocations disposed on the substrate, the array of microlocations comprising electronically addressable electrodes, the array being formed within a region,

a first collection electrode disposed on the substrate and adjacent to a first side of the array of microlocations,

a second collection electrode disposed on the substrate, and adjacent to a second side of the array of microlocations, the second side of the array being opposite of the first side such that the array of microlocations is disposed between the first collection electrode and the second collection electrode, and at least in part on the opposite side of the region; and

a flow cell, the flow cell adapted to be supported on the substrate and to define a footprint of the flow cell wherein the area of the first collection electrode and second collection electrode in proportion to the footprint of the flow cell is at least 40%.

Claim 40 (Cancelled)

Claim 41 (Previously Cancelled)

Claim 42 (Cancelled)

Claims 43-45 (Previously Cancelled)

Claim 46 (Cancelled)

Claim 47 (Cancelled)

Claim 48 (Original) The electronic device for performing active biological operations of claim 39 wherein the collection electrode is a complexity reduction electrode.

Claim 49 (Original) The electronic device for performing active biological operations of claim 39 further including focusing electrodes.

Claim 50 (Previously Cancelled)

Claim 51 (Currently Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell defines a footprint such that the combined area of the first collection electrode and second collection electrodes in proportion to the footprint of the flow cell is at least 50%.

Claim 52 (Currently Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell defines a footprint such that the combined area of the first collection electrode and second collection electrodes in proportion to the footprint of the flow cell is at least 60%.

Claim 53 (Previously Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell includes an inlet.

Claim 54 (Previously Amended) The electronic device for performing active biological operations of claim 39 wherein the flow cell includes an outlet.

Claim 55 (Currently Amended) A method for analysis of a biological sample utilizing an electronic device for performing active biological operations, the device including a support substrate, an array of microlocations disposed on the substrate, the array of microlocations comprising electronically addressable electrodes ~~the array being formed within a region~~, a first collection electrode disposed on the substrate and adjacent to a first side of the array of microlocations, and a second collection electrode disposed on the substrate, and adjacent a second side of the array of microlocations, the second side of the array being opposite of the first side such that the array of microlocations is disposed between the first collection electrode and the second collection electrode, ~~and at least in part on the opposite side of the region~~, the method comprising the steps of:

providing the sample to the device,

placing the first collection electrode attractive relative to ~~for~~ desired charged biological materials, thereby concentrating charged biological materials on the first collection electrode,

placing the second collection electrode attractive relative to ~~for~~ the desired charged biological materials, ~~relative to the first collection electrode~~, thereby transporting said charged biological materials from the first collection electrode towards the second collection electrode, and over at least a portion of said array of microlocations disposed on the substrate, whereby interaction between the charged biological materials and the array occurs.

Claim 56 (Currently Amended) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the electrodes of the array isare maintained electrically passive.

Claim 57 (Currently Amended) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the electrodes of the array isare electrically active to facilitate interaction between the array and the charged biological material.

Claim 58 (Original) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the charged biological material is moved over the array as a wave.

Claim 59 (Cancelled)

Claim 60 (Currently Amended) The method for analysis of a biological sample of claim 55 utilizing an electronic device for performing active biological operations, wherein the charged biological material is moved over the array and held in place over the array~~maintained in that lateral position relative to the substrate.~~

Claims 61-114 (Previously Cancelled)

Claim 115 (Currently Amended) The method for analysis of a biological sample according to claim 55 further comprising the step of applying an AC alternating current field between the first and second collection electrodes so as to hold the charged biological materials over the array.

Claim 116 (Currently Amended) The method for analysis of a biological sample according to claim 55, wherein when the second collection electrode is placed attractive

relative to charged biological material, the first collection electrode is placed repulsive
relative to charged biological material, thereby concentrating charged biological species on
the second collection electrode.

Claim 117 (Currently Amended) The method for analysis of a biological sample
according to claim 55 further comprising the additional steps of placing the second
collection electrode repulsive relative to charged biological material and placing the first
collection electrode attractive relative to charged biological material, thereby concentrating
charged biological species on the first collection electrode.
